

CLAIMS

1.-6. (Canceled)

7. (Previously presented) Apparatus for extracorporeal oxygenation of a patient's blood during cardiopulmonary bypass surgery, the apparatus comprising:

- a venous line constructed and arranged to receive venous blood from a patient;
- a bubble sensor, arranged at or connected to said venous line, that is constructed and arranged to detect bubbles in the venous blood received from the patient;
- an air filter, connected to said venous line and arranged downstream of said bubble sensor, that is constructed and arranged to separate air from blood, said air filter including an air chamber adapted to receive air and a diverter constructed and arranged to divert the air entering said air filter into said air chamber;
- a blood oxygenator constructed and arranged to oxygenate blood-after passing through said air filter;
- an arterial line constructed and arranged to return blood to the arterial system of the patient after the blood has been oxygenated by said blood oxygenator;
- a first pump constructed and arranged to generate a first vacuum to pump blood through said venous line, said air filter, said blood oxygenator and said arterial line; and
- a second pump constructed and arranged to generate a second vacuum to draw air from said air chamber of said air filter only when bubbles are detected in the venous blood by said bubble sensor.

8. (Previously presented) The apparatus according to claim 7, wherein said second pump includes an outlet port that is connected to a cardiotomy reservoir, said cardiotomy reservoir being connected to said venous line upstream of said bubble sensor.

9. (Previously presented) The apparatus according to claim 8, further comprising a third pump constructed and arranged to generate a third vacuum which is to be applied to said cardiotomy

reservoir to draw blood from said cardiomy reservoir and to supply blood from said cardiomy reservoir to said venous line.

10. (Previously presented) The apparatus according to claim 9, further comprising a fourth vacuum source constructed and arranged to generate a fourth vacuum that is to be applied to said cardiomy reservoir to draw air from said cardiomy reservoir.

11. (Previously presented) The apparatus according to claim 7, wherein said bubble sensor is connected to said second pump, said bubble sensor constructed and arranged to actuate said second pump only when bubbles are sensed in the venous blood.